SCHEDULE OF ADDITIONAL TOPICS OF NUMS/NMDCAT						
Sr. No	**Date**	**Day**	**Biology**	**Physics**	**Chemistry**	**English**
1	Friday, October 9, 2020	Friday	**Unit-1** Cell Structure & Function, Biological Molecules, Bioenergetics, Biodiversity (Acellular Life)	**Unit-1** Force and Motion Work and Energy Rotaional and Circular Motion	**Unit-1** Properties of cathode rays Properties of positive rays	Active and Passive Voice
2	Saturday, October 10, 2020	Saturday	**Test Unit-1**			Active and Passive Voice
3	Sunday, October 11, 2020	Sunday	**Unit-2** Prokaryotes (Kingdom Monera)	**Test Unit-1**	Properties of neutrons Discovery of electron Discovery of proton (positive Rays)	**TEST-1**
4	Monday, October 12, 2020	Monday	**Test Unit-2**			
	Tuesday, October 13, 2020	Tuesday	**HOLIDAY**			
5	Wednesday, October 14, 2020	Wednesday	**Unit-3** Protists & Fungi		Rutherford's model of atom (Discovery of Nucleus)	**TEST-2**
6	Thursday, October 15, 2020	Thursday	**Test Unit-3**	**Unit-2** Waves Thermodynamics	Spectrum Hydrogen spectrum X-rays and atomic number	Vocabulary Words (31 -60) (Synonyms, Antonyms, Syn. in context)
7	Friday, October 16, 2020	Friday	**Unit-4** Diversity Among Plants (Kingdom Plantae)		**Test Unit-1**	**TEST-3**
8	Saturday, October 17, 2020	Saturday	**Test Unit-4**	**Test Unit-2**		Direct and Indirect Narration
9	Sunday, October 18, 2020	Sunday	**Unit-5** Diversity Among Animals (Kingdom Animalia)		**Unit-2** Gases Kinetic interpretation of temperature	Direct and Indirect Narration
10	Monday, October 19, 2020	Monday	**Test Unit-5**			**TEST-4**
	Tuesday, October 20, 2020	Tuesday	**HOLIDAY**			
11	Wednesday, October 21, 2020	Wednesday	**Unit-6** Life Processes in Animals & Plants	**Unit-3** Electrostatics Current Electricity Electromagnetism	Viscosity and Surface tension	Vocabulary Words (61-90) (Synonyms, Antonyms, Syn. in context)
12	Thursday, October 22, 2020	Thursday	**Test Unit-6**			**TEST-5**
13	Friday, October 23, 2020	Friday	**Unit-7** Homeostasis, Support & Movement		Solids Properties of crystalline solids Geometrical shape Melting points	Analogy (1-18)
14	Saturday, October 24, 2020	Saturday	**Test Unit-7**	Test Unit-3	Crystal lattice Unit cell .Crytal and their classification	**TEST-6**
15	Sunday, October 25, 2020	Sunday	**Unit-8** Control & Coordination, Reproduction		**Test Unit-2**	Analogy (19-39)
16	Monday, October 26, 2020	Monday	**Test Unit-8**			**TEST-7**
	Tuesday, October 27, 2020	Tuesday	**HOLIDAY**			

17	Wednesday, October 28, 2020	Wednesday	**Unit-9** Growth & Development	**Unit-4** Electromagnetic Induction	Unit-3 Group 1 Elements (Alkali Metals) Trends in reactivity	Vocabulary Words (91 -120) (Synonyms, Antonyms, Syn. in context)
18	Thursday, October 29, 2020	Thursday	**Test Unit-9**			**TEST-8**
19	Friday, October 30, 2020	Friday	**Unit-10** Variations & Genetics, Chromosome & DNA	**Test Unit-4**	Petroleum: Refining, Reforming	Vocabulary Words (121 -150) (Synonyms, Antonyms, Syn. in context)
20	Saturday, October 31, 2020	Saturday	**Test Unit-10**			**TEST-9**
21	Sunday, November 1, 2020	Sunday	**Unit-11** Evolution, Biotechnology		Preparations of carboxylic acids	Spellings
22	Monday, November 2, 2020	Monday	**Test Unit-11**	**Unit-5** Dawn of Modern Physics Atomic Spectra Nuclear Physics	Describe reactions of carboxylic acid derivatives	**TEST-10**
	Tuesday, November 3, 2020	Tuesday	**HOLIDAY**			
23	Wednesday, November 4, 2020	Wednesday	**Unit-12** Man & His Environment	**Test Unit-5**	**Test Unit-3**	Punctuation
24	Thursday, November 5, 2020	Thursday	**Test Unit-12**			**TEST-11**
25	Friday, November 6, 2020	Friday	**FLP-1 (As Per NUMS/NMDCAT Syllabus & Pattern)**			
26	Saturday, November 7, 2020	Saturday	**FLP-2 (As Per NUMS/NMDCAT Syllabus & Pattern)**			
27	Sunday, November 8, 2020	Sunday	**FLP-3 (As Per NUMS/NMDCAT Syllabus & Pattern)**			
28	Monday, November 9, 2020	Monday	**FLP-4 (As Per NUMS/NMDCAT Syllabus & Pattern)**			

NUMS/NMDCAT 2020 - ADDITIONAL TOPICS - BIOLOGY			
Sr. #	**Unit #**	**Topics**	**Subtopics**
1	1	Cell Structure & Function	Cell Wall
2		Biological Molecules	1. Introduction to Biochemistry & Chemical Composition of Protoplasm 2. Waxes & Terpenoids 3. Conjugated Molecules
3		Bioenergetics	1. Role of CO_2 2. Role of Water 3. Role of Light
4		Biodiversity (Acellular Life)	1. Life Cycle of Bacteriophage 2. Viral Diseases (Influenza, Hepatitis, Measles) 3. Viroids & Prions
5	2	Prokaryotes (Kingdom Monera)	1. Bacterial Cell Structure 2. Bacterial Cell Wall 3. Nutrition in Bacteria 4. Diversity in Size and Shape of Bacteria 5. Respiration in Bacteria 6. Motility in Bacteria 7. Reproduction in Bacteria 8. Growth in Bacteria 9. Cyanobacteria 10. Importance of Bacteria 11. Control of Bacteria
6	3	Protists & Fungi	1. Diversity Among Protists 2. Protozoa 3. Algae 4. Fungi-Like Protists 5. Introduction & Structure of Fungi 6. Classification of Fungi 7. Reproduction in Fungi 8. Importance of Fungi

7	4	Diversity Among Plants (Kingdom Plantae)	1. Introduction to Plants 2. Bryophytes & Land Adaptations 3. Life Cycle of Moss 4. Tracheophytes 5. Life Cycle of Ferns 6. Life Cycle of Seed Plants 7. Evolution of Seed 8. Evolution of Leaf 9. Gymnosperms 10. Angiosperms 11. Inflorescence
8	5	Diversity Among Animals (Kingdom Animalia)	1. Introduction to Animals 2. Classification of Animals 3. Diploblastic & Triploblastic Organization 4. Coelom, Proterostomes, deuterostomes 5. Phylum Porifera 6. Phylum Cnidaria 7. Phylum Platyhelminthes 8. Phylum Aschelminthes 9. Phylum Mollusca 10. Phylum Annelida 11. Phylum Arthropoda 12. Phylum Echinodermata 13. Phylum Chordata 14. Fishes 15. Amphibian 16. Retiles 17. Aves 18. Mammals
9	6	Life Process in Animals & Plants	1. Nutrition in Plants (Mineral Requirement & deficiency) 2. Carnivorous Plants 3. Gaseous Exchange in Plants 4. Digestion in Oral Cavity 5. Oesophagus 6. Stomach 7. Intestine 8. Liver & Pancreas 9. Disorders of Digestive Tract (Dyspepsia, Ulcer, Obesity, Bulimia nervosa, Anorexia nervosa)
10	7	Homeostasis	1. Osmoconformers & Osmoregulators 2. Osmoregulation in Different Environments 3. Nature of Excretory Products in Relation to Habitat 4. Disorders of Urinary Tract (Urinary Tract Infections, Kidney Stones, Kidney Failure, Renal Dialysis, Kidney Transplant)
11	7	Support & Movement	1. Bone and Cartilage 2. Main Divisions of Human Skeleton 3. Joints 4. Joint Injuries 5. Disorders of Human Skeleton (Sciatica, Disc Slip, Spondylosis, Arthritis) 6. Fracture & Bone Healing 7. Muscle Problems

12	8	Coordination & Control	1. Basic Organization of Human Nervous System (CNS, PNS, Brain) 2. Sensory Receptors & Their Working 3. Pituitary Gland 4. Thyroid Gland 5. Parathyroid Gland 6. Adrenal Gland 7. Gonads 8. Feedback Mechanism
13		Reproduction	1. Male & Female Infertility 2. Test Tube Babies 3. Miscarriage, Abortion & its Causes
14	9	Growth & Development	1. Embryonic development 2. Cleavage 3. Gastrulation 4. Organogenesis 5. Neurulation 6. Control of development 7. Role of Nucleus in Development 8. Role of Cytoplasm in development 9. Mechanism of Cellular Differentiation 10. Embryonic Induction & Its Mechanism 11. Aging 12. Regeneration 13. Abnormal Development
15	10	Variations & Genetics	1. Exceptions to Mendelian Inheritance 2. ABO Blood Group System 3. Rh Blood Group System 4. Epistasis, Bombay Phenotype, Polygenic Inheritance 5. Sex determination 6. Sex Linkage
16		Chromosome & DNA	1. Concept of Gene 2. Chromosomal Theory of Inheritance 3. DNA as Heredity Material 4. Post-Transcriptional Modifications in RNA
17	11	Evolution	1. Evolution from Prokaryotes to Eukaryotes 2. Lamarcks Theory of Evolution 3. Evidences of Evolution
18		Biotechnology	1. Genomic Library 2. Gene Sequencing (Sanger's Method, Gel Electrophoresis, Automated DNA Sequencing) 3. Genome Maps 4. Human Genome Project 5. Tissue, Cell and Organ Culture 6. Biotechnology & Healthcare 7. Scope & Importance of Biotechnology
19	12	Man & His Environment	1. Biogeochemical Cycle (Water & Nitrogen Cycle) 2. Population Dynamics (Characteristics of Population, Carrying Capacity, Human Population & Pakistan) 3. Human Impact on Environment (Global Warming, Acid Rain)

NUMS/NMDCAT 2020 - ADDITIONAL TOPICS - PHYSICS			
Sr. #	**Unit #**	**Topics**	**Subtopics**
1	1	Force and Motion	1. Displacement Time Graph 2. Effect of Air Resitance in Projectile Motion
2		Work and Energy	1. Gravitational Potential Energy 2. Work done against Friction 3. Implication of energy losses in Practical Devices
3		Rotational and Circular Motion	Relation between Linear and Angular Quantities
4	2	Waves	1. Periodic Waves 2. Speed of Sound in Air
5		Thermodynamics	1. Thermodynamic System 2. First Law of Thermodynamics 3. Second Law of Thermodynamics 4. Thermal Equilibrium 5. Terms in Thermodynamic System 6. Work Done
6	3	Electrostatics	1. Electric Field Intensity Due to Infinite Sheet of Charge 2. Electric Field Intensity Due to Oppositly Charged Plates 3. Combination Of Capacitors 4. Charging and Discharging of Capacitors
7		Current Electricity	1. Kilowatt Hour
8		Electromagnetism	1. Path Followed by Charge Particle in Uniform Magnetic Field
9	4	Electromagnetic Induction	1. Application in Seismometer 2. Generating Electricity 3. A.C Generator 4. Motional EMF 5.Mutual Inductance 6. Self Inductance 7. Activity
10	5	Dawn of Modern Physics	1. Wave Particle Duality 2. Electron Microscope 3. Uncertainity Principle
11		Atomic Spectra	1. Atomic Spectra / Line Spectrum
12		Nuclear Physics	1. Biological Effects of Radiation 2. Biological and Medical Uses of Radiations

NUMS/NMDCAT 2020 - ADDITIONAL TOPICS - CHEMISTRY			
Sr. #	**Unit #**	**Topics**	**Subtopics**
1	1	2. Atomic Structure	1. Properties of cathode rays 2. Properties of positive rays 3. Properties of neutrons 4. Discovery of electron 5. Discovery of proton (positive Rays) 6. Discovery of neutron 7. Rutherford's model of atom (Discovery of Nucleus) 8. Spectrum 9. Hydrogen spectrum 10.X-rays and atomic number
2	2	4. Gases 6. Solids	Gases 1. Kinetic interpretation of temperature 2. Viscosity and Surface tension Solids 1. Properties of crystalline solids 2. Geometrical shape 3. Melting points 4. Crystal lattice 5. Unit cell 6. Crystal and their classification
3	3	11. s and p block elements 13. Fundamental Principles of Organic Chemistry 18. Carboxylic Acids	1. Group 1 Elements (Alkali Metals) 2. Trends in reactivity 3. Petroleum: Refining, Reforming 4. Preparations of carboxylic acids 5. Describe reactions of carboxylic acid derivatives.

NUMS/NMDCAT 2020 - ADDITIONAL TOPICS - ENGLISH		
Sr. #	**Topics**	**Subtopics**
1	Active and Passive Voice	CHANGE – 1: CHANGE OF PRONOUN, CHANGE – 2 CHANGE OF VERBS CHANGE # 3 PASSIVE VOICE HELPING VERB + 3rd FORM OF VERB INTERROGATIVE IN PASSIVE VOICE THE IMPERATIVE IN VOICE PREPOSITION IN VOICE TWO OBJECTS IN VOICE SPECIAL CASES
2	Vocabulary Words (01 -30) (Synonyms, Antonyms, Syn. in context)	1. Abandon 2. Abbreviate: 3. Blame: 4. Blunt: 5. Boost: 6. Brace: 7. Brevity: 8. Brisk: 9. Brusque:10. Bustle: 11. Combat: 12. Compassion:13. Concord: 14. Concrete: 15. Confess: 16. Confine: 17. Consumption: 18. Convict: 19. Convenient: 20. Cordial: 21. Cripple: 22. Decay: 23. Deny: 24. Despair: 25. Despise: 26. Destroy: 27. Deviate: 28. Disappoint:29. Diversity: 30. Eager:
3	Vocabulary Words (31 -60) (Synonyms, Antonyms, Syn. in context)	31. Ebb: 32. Elegant: 33. Emotion:34. Enchanted:35. Encroach: 36. Endanger: 37. Endorse: 38. Evasion: 39. Fatal: 40. Feeble: 41. Filthy: 42. Foresight:43. Gather: 44. Gay:45. Gorgeous: 46. Grasp: 47. Humid: 48. Imitate:49. Incline:50. Incur: 51. Indecent: 52. Induce: 53. Integrity: 54. Intensify: 55. Keen: 56. Labour: 57. Lively: 58. Miscellaneous: 59. Mourn: 60. Native:
4	Direct and Indirect Narration	CHANGE – 1: CHANGE OF PRONOUN, CHANGE – 2 CHANGE OF VERBS CHANGE # 3 CERTAIN WORDS, DESCRIPTIVE SENTENCES INTERROGATIVE SENTENCES IMPERATIVE SENTENCES EXCLAMATORY SENTENCES OPTATIVE SENTENCES
5	Vocabulary Words (61-90) (Synonyms, Antonyms, Syn. in context)	61. Notion: 62. Numerous: 63. Obvious:64. Obscure: 65. Odd: 66. Onerous: 67. Ooze: 68. Optimist: 69. Pacify: 70. Pardon: 71. Partial: 72. Passive: 73. Pause: 74. Permit:75. Persist: 76. Persuade: 77. Plead:78. Predicament: 79. Prediction: 80. Prejudice: 81. Premature: 82. Pretend:83. Privilege: 84. Prohibit: 85. Prolong: 86. Queer: 87. Quiet:88. Radical: 89. Ration:90. Rebellion:
6	Analogy (1-18)	1. THING AND WHAT IT SYMBOLIZES 2. THING AND ITS ORIGIN 3. AN ACTION AND ITS LOGICAL CONCLUSION 4. THING AND ITS FUNCTION 5. A THING AND ITS MANNER 6. DEFINITION 7. DEFINING CHARACTERISTIC (TYPE) 8. DEFINING CHARACTERISTIC (GENDER) 9. DEFINING CHARACTERISTIC (SPECIFIC) 10. DEFINING CHARACTERISTIC (THE YOUNG ONES) 11. DEFINING CHARACTERISTIC (NUMBER) 12. A THING AND ITS QUALITY 13. A THING AND WHAT IT REQUIRES FOR 14. ANTONYMS 15. ANTONYM VARIANTS 16. SYNONYMS 17. SYNONYM VARIANTS 18. DEGREE OF INTENSITY

7	Analogy (19-39)	19. TIME SEQUENCE 20. SPATIAL SEQUENCE 21. CAUSE AND ITS EFFECT 22. WORKER AND WORKPLACE 23. WORKER AND TOOL 24. WORKER AND ARTICLE CREATED 25. CLASS AND MEMBER (PART TO WHOLE) 26. A THING AND WHERE IT IS STORED 27. THE ANIMALS AND WHERE THEY ARE KEPT 28. AN OBJECT AND ITS RELATION WITH SOME OTHER OBJECT 29. WAY OF CREATION 30. ACTION AND ITS SIGNIFICANCE 31. GRAMMATICAL RELATION 32. ONE THING IS CHARACTERIZED DUE TO LACK OF THE OTHER THING 33. A THING AND ITS STUDY 34. ONE THING IS CHARACTERIZED DUE TO THE PRESENCE OF THE OTHER THING 35. ONE THING IS REMOVES THE OTHER THING 36. NUMBER RELATION 37. ONE WORD IS THE PARTICULAR SOUND OF THE OTHER 38. PERSON AND THING AVOIDED 39. A THING AND ITS COMPOSITION
8	Vocabulary Words (91 -120) (Synonyms, Antonyms, Syn. in context)	91. Resign: 92. Riddle:93. Rot:94. Sanction:95. Scatter: 96. Scanty: 97. Scold:98. Seek:99. Shallow:100. Slander: 101. Smart: 102. Solemn:103. Soothe:104. Spiteful:105. Steady: 106. Steep: 107. Stimulate:108. Stimulus:109. Sublime: 110. Substantial: 111. Stubborn: 112. Summon: 113. Superficial:114. Surrender:115. Tease: 116. Tempt: 117. Tendency: 118. Terse: 119. Theory: 120. Timid:
9	Vocabulary Words (121 -150) (Synonyms, Antonyms, Syn. in context)	121. Torture: 122. Transparent:123. Treacherous:124. Tremble:125. Tyranny: 126. Undertaking: 127. Universal: 128. Uphold: 129. Unanimity:130. Unconquerable: 131. Utility: 132. Vacant: 133. Vague: 134. Valid: 135. Various: 136. Vehement: 137. Void: 138. Vulgar: 139. Wages: 140. Want: 141. Wasteful: 142. Wavering: 143. Weak: 144. Wet: 145. Wicked: 146. Wild: 147. Xanthous: 148. Yield: 149. Yawn: 150. Zeal:
10	Spellings	Some Spelling Patterns, PREFIXES Suffixes When to double a final consonant Exceptions:
11	Punctuation	FULL STOP, COMMA, HYOHEN, COLON, SEMI COLON, DASH, INVERTED COMMAS, EXCLAMATORY MARKS, PARENTHESIS